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Application No. S2003/0341

Date of Filing 7 May 2003

Applicant THOMAS WILLIAM FLEMING, an Irish citizen, of Jamesbrook, Midleton, County Cork, Ireland.

Dated this 12 day of May 2004.

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APPLICATION FOR THE GRANT OF A PATENT

PATENTS ACT 1992

The Applicant(s) named herein hereby request(s).

[] the grant of a patent under Part II of the Act
[X] the grant of a short-term patent under Part III of the
Act
on the basis of the information furnished hereunder.

1. Applicant(s)

FLEMING Thomas William
Jamesbrook
Midleton
County Cork
Ireland
an Irish citizen

2. Title of Invention

A hand held cable reel

3. Declaration of Priority on basis of previously filed application(s) for same invention (Sections 25 & 26)

<u>Previous Filing Date</u>	<u>Country in or for which filed</u>	<u>Filing No.</u>
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4. Identification of Inventor(s)

Name(s) and addressee(s) of person(s) believed
by the Applicant(s) to be the inventor(s)

Thomas William Fleming
an Irish citizen of Jamesbrook, Midleton, County Cork, Ireland.

5. Statement of right to be granted a patent (Section 17(2) (b))

6. Items accompanying this Request

- (i) [X] prescribed filing fee (Euro 60.00)
- (ii) [] specification containing a description and claims
- [X] specification containing a description only
- [X] Drawings referred to in description or claims
- (iii) [] An abstract
- (iv) [] Copy of previous application(s) whose priority is claimed
- (v) [] Translation of previous application whose priority is claimed
- (vi) [X] Authorisation of Agent (this may be given at 8 below if this Request is signed by the Applicant(s))

7. Divisional Application(s)

The following information is applicable to the present application which is made under Section 24 -

Earlier Application No.

Filing Date:

8. Agent

The following is authorised to act as agent in all proceedings connected with the obtaining of a patent to which this request relates and in relation to any patent granted -

Name & Address

Cruickshank & Co. at their address recorded for the time being in the Register of Patent Agents is hereby appointed Agents and address for service, presently 1 Holles Street, Dublin 2.

9. Address for service (if different from that at 8)

Signed Cruickshank & Co.

By:- *Michael Rusey*

Agents for the Applicant

Executive.

Date May 07, 2003.

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- 1 -

"A hand held cable reel"

- This invention relates to a hand-held cable reel of the type comprising a central cable receiving core mounted between a pair of disc like end flanges, each flange having a handle mounted on the outermost surface of the flange, the handles being radially offset from the central axis of the core and circumferentially offset relative to each other.
- Hand-held cable reels have been known now for many years. Generally speaking, these cable reels are carried by an operator who pays out the cable from the reel until a sufficient amount of cable has been paid out, after which the cable is secured to the reel to prevent further payout of cable from the reel. After use, the cable is wound back about the reel and stored until required again.
- It will be understood that throughout this specification the term cable will be used which is to include wire, fabric, tape, electric cable or plastics material that may be wound on a reel. Also included under the term cable are lengths of rope, hosepipe or chain. Indeed any cable-like material that may be wound around the hand-held reel is encompassed within the term cable.
- One such known type of cable reel is that disclosed in US patent number 3481557 (Miller). This device shows a masons line reel that may be used for paying out and retrieving line from the reel. One disadvantage of this device is that it is relatively unwieldy and difficult to wind or unwind line from the reel in a quick and efficient manner. Another disadvantage of this type of reel is that the handles protrude from the end flanges by a significant distance thereby hindering compact storage of the device. In addition to the above, cleats have to be provided to prevent inadvertent payout of the line from the reel when the reel is not in use. This increases the cost of producing such a reel.
- Another known type of cable reel is that shown in US patent number 4022398 (Youngblood). Although this reel goes some way towards obviating the disadvantages of other known reels, this reel is still relatively unwieldy and difficult to operate in a quick and efficient manner. The handles are in many instances difficult to grip firmly

thereby further inhibiting operation of the device.

One other known type of hand-held cable reel is that described in the applicants own co-pending PCT patent application number WO 02/49949. This cable reel is effective
5 in allowing cable to be paid out or reeled in relatively quickly with little difficulty. However, the cable reel requires a significant amount of space for storage and additional means to prevent inadvertent payout of cable from the reel must be provided.

10 It is an object therefore of the present invention to provide a cable reel that overcomes at least some of the problems associated with the known types of hand-held cable reel and that is both efficient in use and inexpensive to manufacture. It is a further object of the present invention to provide a cable reel that may be stored in a compact manner.

15 **Statements of Invention**

According to the invention there is provided a hand-held cable reel comprising a central cable receiving core mounted between a pair of disc like end flanges, each flange having a handle mounted on the outermost surface of the flange, the handles being radially offset from the central axis of the core and circumferentially offset relative to each other, characterised in that
20

each handle further comprises a base portion rotatably mounted on the flange and a grip portion connected to the base portion, the base portion and the grip portion being arranged to form a loop for reception of at least one finger of an operator therethrough. By having such a handle the operator may grasp the grip portion firmly with the palms of his hands facing inwardly towards the flanges. By having the handles oriented in this way the tendency of the cable reel to oscillate from side to side when the cable is being reeled in will be reduced. This will provide a cable reel that is
25 much easier to manipulate and cable may be wound thereon in an orderly fashion. In addition to this, the cable reel will be more compact and will take up considerably less space when stored away.
30

In another embodiment of the invention there is provided a hand-held cable reel in

which the grip portion is hingedly mounted on the base portion. By having the grip portion hingedly mounted on the base portion, the grip portion may be laid flat along the base portion and hence the cable reel may be stowed in a more compact manner.

- 5 In one embodiment of the invention there is provided a hand-held cable reel in which the grip portion is flattened and/or may be provided with at least one ridge projecting outwardly therefrom to aid in location of the operators fingers about the grip portion. This will facilitate gripping of the handles by the operator.
- 10 In a further embodiment of the invention there is provided a hand-held cable reel in which there is provided means to releasably secure the grip portion in position relative the base portion. This will provide a stable and rigid grip for the operator of the device. This means could be provided by way of an over centre spring, a spring loaded lock or a twist lock.
- 15 In another embodiment of the invention there is provided a hand-held cable reel in which the grip portion is releasably secured to the base portion. This will further allow the cable reel to be dismantled and packaged away using as little space as possible.
- 20 In one embodiment of the invention there is provided a hand-held cable reel in which the base portion and the grip portion are arranged to form a closed loop. Preferably, the loop formed by the base portion and the grip portion is substantially elliptical in shape.
- 25 In one embodiment of the invention there is provided a hand-held cable reel comprising a central cable receiving core mounted between a pair of disc like end flanges, each flange having a handle mounted on the outermost surface of the flange, the handles being radially offset from the central axis of the core and circumferentially offset relative to each other, characterised in that:
 - 30 at least one handle further comprises a shaft cranked intermediate its ends to form an L-shaped handle, the proximal end of which is hingedly attached to the flange and the distal end forming a hand grip, the handle being pivotable about the hinge to and from an operating position in which the hand grip protrudes

laterally from the flange and a storage position in which the hand grip extends from one flange across the core to the other flange.

By having such a hand-held cable reel the handle will be movable to and from an
5 operating position in which the hand grip protrudes laterally from the flange and the storage position in which the handgrip extends from one flange across the core to the other flange. When the handle is in a storage position inadvertent unwinding of the cable will be prevented. Furthermore, the cable reel may be packaged away in a compact, secure manner.

10 In a further embodiment of the invention there is provided a hand-held cable reel in which the L-shaped handle is movable through an angle of approximately 180°.

15 In another embodiment of the invention there is provided a hand-held cable reel in which the flange opposite the flange upon which the L-shaped handle is mounted is provided with means to releasably secure the L-shaped handle in a storage position. This will assist in securely retaining the L-shaped handle in position.

20 In one embodiment of the invention there is provided a hand-held cable reel in which the flange opposite the flange upon which the L-shaped handle is mounted is cam shaped and that flange is provided with a receiving hole for receiving the end of the grip portion of the L-shaped handle. This is seen as a particularly efficient way of retaining the L-shaped handle in a storage position. Furthermore, it is simple and inexpensive to manufacture. Alternatively, the L-shaped handle could itself be cranked
25 further adjacent its free end thereby obviating the need for a can shaped flange. A circular flange with a receiving hole would be required to receive the free end of the L-shaped handle that had been cranked further adjacent its free end.

30 In another embodiment of the invention there is provided a hand-held cable reel in which the means to lock the grip portion in position comprises a spring lock.

In a further embodiment of the invention there is provided a hand-held cable reel in which the cable reel is further provided with a non-conductive cord for electrically isolated connection of the cable reel to a support structure. By having a non-

conductive cord, the cable reel may be electrically isolated from any support from which it is suspended. This may be particularly useful when the cable is a livestock restraining electric fencing cable attached to a tree or earthed post.

- 5 In a further embodiment of the invention there is provided a hand-held cable reel in which there is provided a plurality of circumferentially spaced holes spaced apart on each flange and at least one bollard on each flange for securing the cable, thereby preventing further payout of the cable. This is seen as a particularly simple and efficient way of securing the cable once the desired amount of cable has been paid out
10 from the reel. The cable may be lead through one of the holes in a loop which in turn is lead around the bollard. This prevents inadvertent unwinding of the cable.

In one embodiment of the invention there is provided a hand-held cable reel in which the bollard has a corrugated groove across its width for reception of a cable therein.
15 By having a corrugated groove additional protection against slippage of the cable will be provided which will be particularly useful when using 110/220 volt type cable.

- 20 In another embodiment of the invention there is provided a hand-held cable reel in which there is provided an inner circle cut-out on at least one flange and a toothed section of the inner circle cut-out for securing a piece of cable and preventing further payout of the cable. This is particularly simple and cost efficient to manufacture while ensuring cable is not inadvertently paid out from the reel.

25 **Detailed Description of the Invention**

The invention will be more clearly understood from the following description of some embodiments thereof given by way of example only with reference to the accompanying drawings in which

- 30 Fig. 1 is a front view of a hand-held cable reel according to the invention;

Fig. 2. is a perspective view of the hand-held cable reel shown in Fig. 1;

- Fig. 3 is a front view of an alternative construction of cable reel according to the invention;
- 5 Fig. 4 is a front view of the cable reel shown in Fig. 3 with it's handles in a storage configuration;
- Fig. 5 is a front view of an alternative construction of cable reel according to the invention;
- 10 Fig. 6 is a front view of the cable reel shown in Fig. 5 with it's handles in a storage configuration;
- Fig. 7 is an end view of the cable reel shown in Figs. 5 and 6;
- 15 Fig. 8 is a perspective view of an alternative construction of cable reel according to the invention;
- Fig. 9 is an enlarged view of a bollard for securing a loop of cable used with the hand-held cable reel of the present invention;
- 20 Fig. 10 is an enlarged exploded view of one type of handle of the cable reel according to the invention;
- Fig. 11 is a side view of an alternative construction of cable reel according to the invention;
- 25 Fig. 12 is an alternative construction of handle for use with the cable reel according to the invention;
- 30 Fig. 13 is a side sectional view of an alternative construction of handle for use with the cable reel according to the invention;
- Fig. 14 is an alternative construction of bollard for use with the cable reel according to the invention; and

Fig. 15 is an alternative construction of handle for use with the cable reel according to the invention.

- 5 Referring to the drawings and initially to Figs. 1 and 2 thereof there is shown a hand-held cable reel, indicated generally by the reference numeral 1, comprising a central cable receiving core 2 mounted between a pair of disc like end flanges 3, each flange having a handle 4 mounted on the outermost surface of the flange. Each handle is radially offset from the central axis of the core and circumferentially offset relative to
10 the other handle and comprises a base portion 5 rotatably mounted on the flange and a grip portion 6 connected to the base portion. The base portion 5 and the grip portion 6 are arranged to form a loop for reception of at least one finger of an operator therethrough.
- 15 In use, an operator grasps each grip portion tightly by wrapping his fingers around the grip portion with the inside of his wrist facing the outermost surface of the flange. The operator then pays out or winds up cable by rotating the cable reel in the known manner.
- 20 Referring now to Figs. 3 and 4 of the drawings there is shown an alternative construction of hand-held cable reel, again indicated by the reference numeral 1. In this embodiment parts similar to those described with reference to the previous drawings are identified by the same reference numerals. In this embodiment each handle 4 comprises a shaft 10 cranked intermediate it's ends to form an L-shaped handle. The proximal end 12 of the shaft is connected to the flange 3 by way of hinge 14. The distal portion of the shaft forms a hand grip 16 having a sleeve 18 rotatably mounted thereon for manipulation by an operator. There is additionally provided means to releasably secure each handle in position relative it's respective flange (not shown).
- 25 30 In use, the handles are secured in an operating position as shown in Fig. 3. The operator grasps the rotatable sleeve firmly and rotates the cable reel in the known manner. Once the cable reel has served it's purpose and the cable has been wound back upon the core, the means to releasably secure the handle in position is released,

- the handle 4 is pivoted about hinge 14 through approximately 180° until it reaches the storage position shown in Fig. 4. In this position the grip portion 16 of the shaft extends along the length of the core from one flange to the other. In this way, the cable reel will be relatively compact and can be stored using the minimum of space.
- 5 Furthermore, inadvertent unwinding of the cable from the core will be prevented. The means to releasably secure the handle in position (not shown) may be operated once again to maintain the handles in the storage configuration.
- 10 Referring now to Figs. 5 to 7 inclusive of the drawings there is shown an alternative construction of hand-held cable reel, again indicated generally by the reference numeral 1. In this embodiment parts similar to those described with reference to the previous drawings are identified by the same reference numerals. In this embodiment each flange 3 is cam shaped having a protrusion extending outwardly from the surface of the flange. A handle securing hole 20 is provided on the protrusion for reception of the end of the grip portion 16. In use, when the cable reel is to be stowed away the means to secure the handle in position (not shown) is released and the handles are pivoted through 180° to the position shown in Fig. 6. The two flanges are constructed from a resilient plastics material and are forced outwards until the end of the grip portions are inserted through the handle receiving holes 20. At that point the resilient flange springs back to its normal position thereby securing the handles in a storage configuration. In order to release the handles the resilient flange is bent outwardly and at the same time the handle is pivoted about the hinge 14 until the end of the grip portion is free of the handle receiving hole.
- 15
- 20
- 25 Referring now to Fig. 8 of the drawings there is shown an alternative construction of hand-held cable reel, again indicated generally by the reference numeral 1. In this embodiment, parts similar to those described with reference to the previous drawings are identified by the same reference numerals. In this embodiment, a length of insulating cord 22 is provided and is stored in cavity 24 in the end flange 4. The electrically insulating cord 22 may be used to suspend the cable reel from an object (not shown) which it is desirable to keep the cable reel electrically isolated from. Such a cord 22 may terminate in a metal hook (not shown).
- 30

Referring now to Fig. 9 of the drawings there is shown an enlarged view of one

embodiment of bollard 28 for securing a length of cable in position on the cable reel. A loop of cable 30 is lead out through a hole 32 in the end flange 4 and is fed into the corrugated groove 34 extending across the width of the bollard 2. The cable is then led back through hole 32. In this way, the bollard will secure the cable in a simple and efficient manner.

Referring now to Fig. 10 of the drawings there is shown an enlarged exploded view of the handle of the hand-held cable reel shown in Figs. 1 and 2. The handle 4 comprises a base portion 5 and a grip portion 6. The grip portion further comprises an elongate connector bar 35 and a C-shaped grip bar 36 connected at its free ends to the connector bar. The base portion 5 further comprises a pair of connector bar receivers 37 for engagement with the connector bar. The connector bar has a sleeved, spring loaded end 40 and at its other end 41 is provided with a spigot 42 for cooperation with one of a pair of spigot receiving grooves 43a, 43b, in the connector bar receiver of the base portion. In order to connect the grip portion and the base portion together the sleeved spring loaded end 40 of the connector bar is inserted into a hole (not shown) of one of the connector bar receivers and force is applied against the spring action thereby temporarily reducing the overall length of the connector bar. The other end 41 of the connector bar is placed adjacent to the hole 44 of the other connector bar receiver 37. The spigot 42 of the connector bar is aligned with the spigot receiving groove 43b. Once the spigot 42 and spigot receiving groove 43b have been aligned the connector bar is released and the spring loaded end 40 acting under the spring force pushes the other end 41 of the connector bar into the hole 44 of the connector bar receiver 37. The grip portion and the base portion are then held in a fixed relationship with respect to each other by virtue of the spigot 42 which is firmly housed in spigot receiving groove 43b.

In order to pivot the grip portion through approximately 90° so that the grip portion lies flat along the base portion, the grip portion is moved against the spring loaded end 40 of the connector bar until the spigot 42 is released from the spigot receiving groove 43b. The grip portion and hence connector bar and spigot are rotated through 90° until spigot 42 and spigot receiving groove 43a are in alignment at which point the grip portion is released. The spring loaded end will then force the spigot 42 and spigot receiving groove 43a into engagement which will retain the grip portion in a fixed

configuration with respect to the base portion.

Referring now to Fig. 11 of the drawings there is shown an alternative construction of cable reel according to the invention. A substantially circular hole 47 is cut out of the centre of each flange 3. At least two grooves 48a, 48b, are cut into the flange from the inner circle thereby providing a tooth 49 for securing a piece of cable. Cable may be lead through another hole on the flange adjacent the outer periphery rim of the flange around the tooth portion and back through the hole in order to secure the cable in position.

10

Referring to Fig. 12 of the drawings there is shown an alternative construction of handle for use with the cable reel of the present invention. The handle comprises a C-shaped frame having bottom wall 50 and side walls 51 and 52. The side walls 51, 52 are connected together by a cross bar 53 at one end thereof. A pivot bar 55 extends from crossbar 53 downwards through bottom wall 50 for connection to a flange of the cable reel (not shown). The handles therefore fully rotate about the flange. As an alternative to having the handle pivot about pivot bar 55 an additional pivot pin (not shown) could be provided in a substantially central position on the bottom wall 50.

15

20 In use the operator inserts two fingers into the handle, one either side of the pivot pin and winds the cable in or out by rotating the cable reel in the known manner.

25

Referring now to Fig. 13 of the drawings there is shown a side sectional view of an alternative construction of handle for use with the cable reel according to the invention. Instead of having a sleeve mounted on a hand grip portion as described previously, there is provided a hand grip portion 100 rotatably mounted on a shaft portion 102.

30

Referring to Fig. 14 there is shown an alternative construction of bollard for use with the present invention. A loop of cable 104 is passed through hole 106 in the flange 3 and led around at least one, preferably one although possibly two, flap shaped bollard 108 on the outside of the reel flange. Each flap shaped bollard 108 projects laterally from the flange surface and may be recurved to enhance its effectiveness. The flap shape bollards may be recurved either towards the centre of the flange or towards the outer peripheral rim of the flange.

Referring to Fig. 15 there is shown a perspective view of an alternative construction of handle for use with the present invention. A C-shaped grip bar 110 flattened parallel to the reel flange (not shown) and permanently held in its working position while rotatably fixed to the flange. A base plate 112 is provided although it will be understood that this is not entirely necessary. The grip bar may be suitably contoured to accommodate the fingers and thumb of either hand. The grip bar is further provided with a pair of frusto conical projections 114, 116 to facilitate rapid unwinding of the tape or cable form the reel while the projections are held between the thumb and middle finger of the right or left hand. It is understood that instead of projections 114, 116, a pair of depressions may be provided as the functional equivalent. Neither the projections or depressions are essential.

It will be understood from the foregoing specification and drawings that a plurality of circumferentially spaced holes adjacent to the outer periphery rim of each flange may be provided as well as a plurality of bollards on the outermost face of each end flange in order to secure the cable in position once a sufficient amount of cable has been paid out by the operator of the hand-held cable reel. The cable is simple led through one of these holes, looped around a bollard and led back through the same hole which will effectively secure the cable from further payout.

It will be further understood that in some of the embodiments shown the connector bar was held in position by way of a spigot on the connector bar and spigot receiving holes on the connector bar receivers. It is envisaged that several different ways of securing the connector bar in position could be used. For example a simple spring lock, twist lock or other device such as an over centre spring could be used to releasably secure the grip portion of the handle in an operating position in which the grip portion protrudes laterally from the base portion or a storage configuration in which the handle rests along the base portion.

30

It is further envisaged that different locking mechanisms for the handle portion other than those described may be used that would fall within the scope of the invention. Essentially what is required is any lock that will firmly secure the handle in either an operating position or a storage position when desired.

It is envisaged that an electrical plug socket may be provided on at least one outer face of the reel flange for reception of an electrical plug. In this way the cable reel could be used as an electrical cable extension.

5

Throughout the specification, in certain embodiments the handles have been described as being hingedly mounted onto the flange. It will be understood that what is essential is that the handle is let pivot through either approximately 90° or approximately 180° as desired. The pivot joint may be a hinge or other similar pivot joint that will allow this movement. These other connections are to be considered as included within the scope of the invention.

In this specification the terms "comprise, comprises, comprised and comprising" as well as the terms "include, includes, included and including" are deemed totally interchangeable and should be afforded the widest possible interpretation.

This invention is in no way limited to the embodiments hereinbefore described and may be varied in both construction and detail within the scope of the claims.

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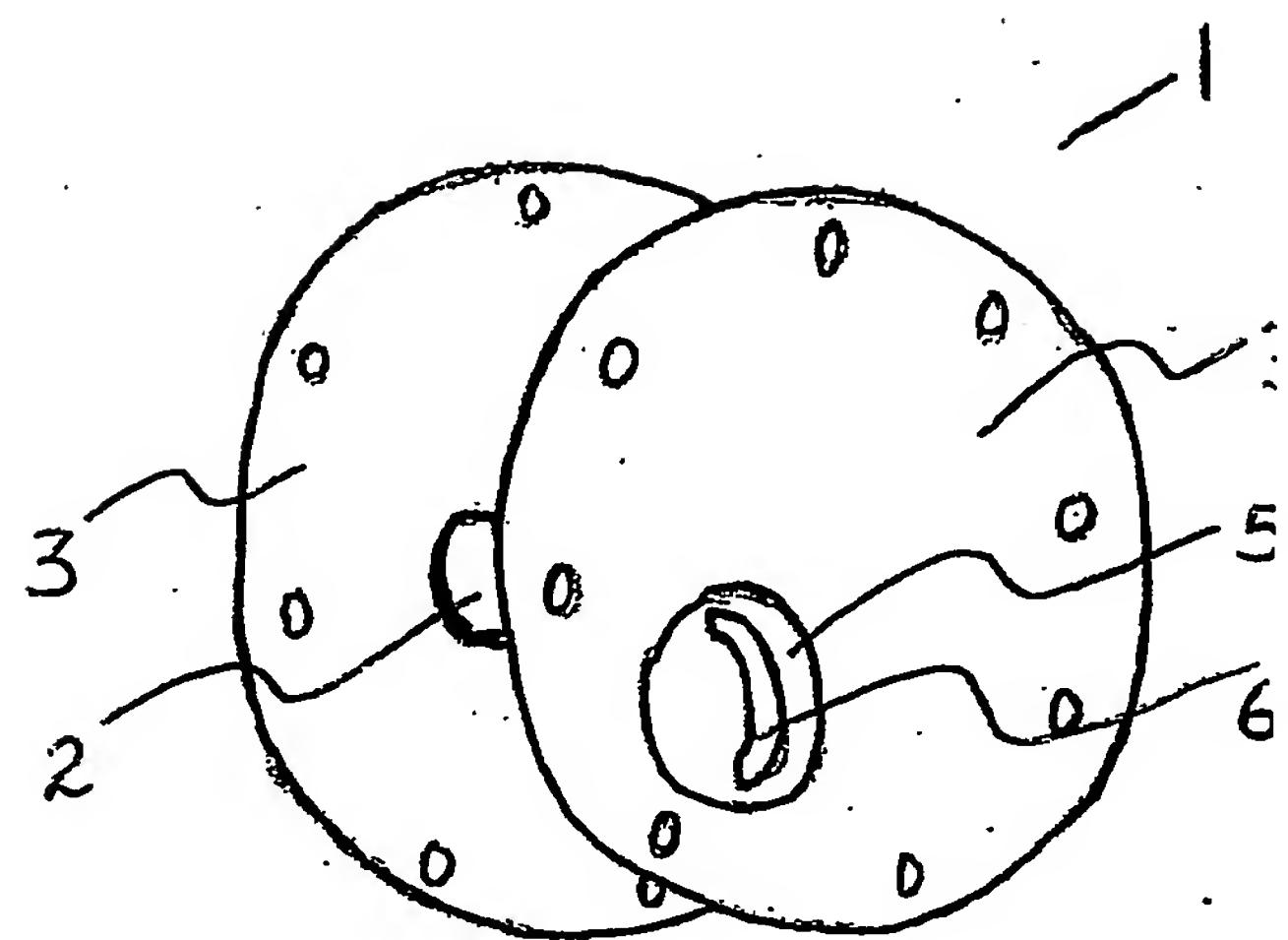
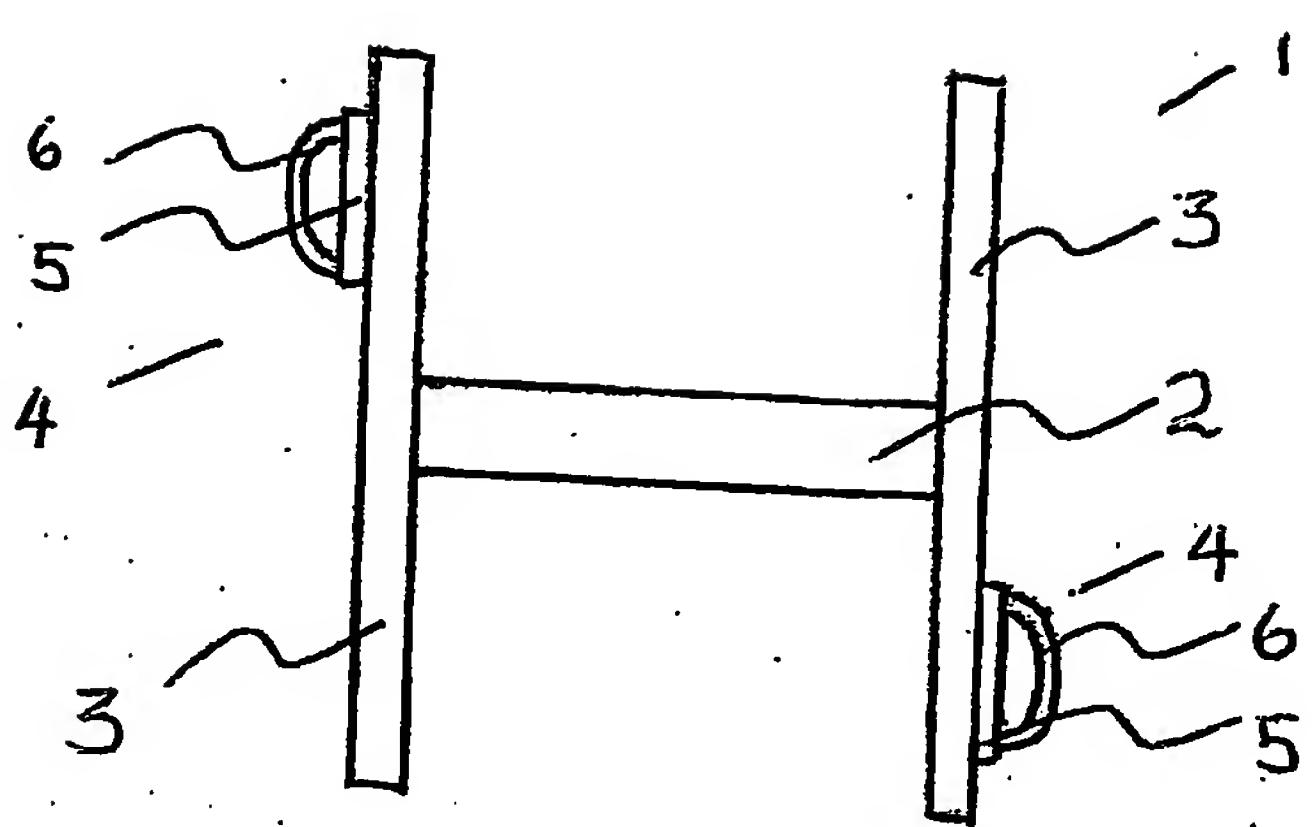


FIG1

FIG2

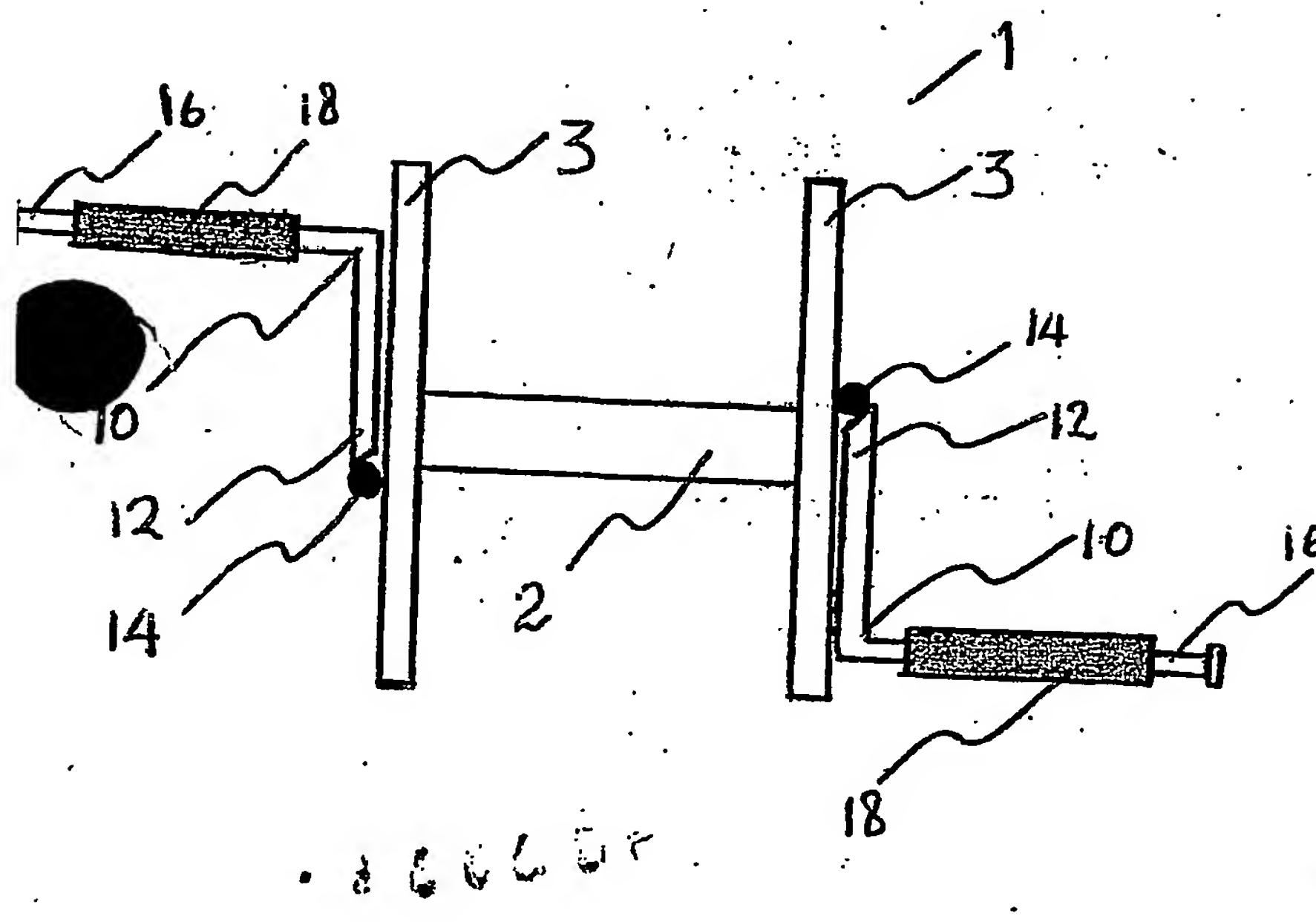


FIG3

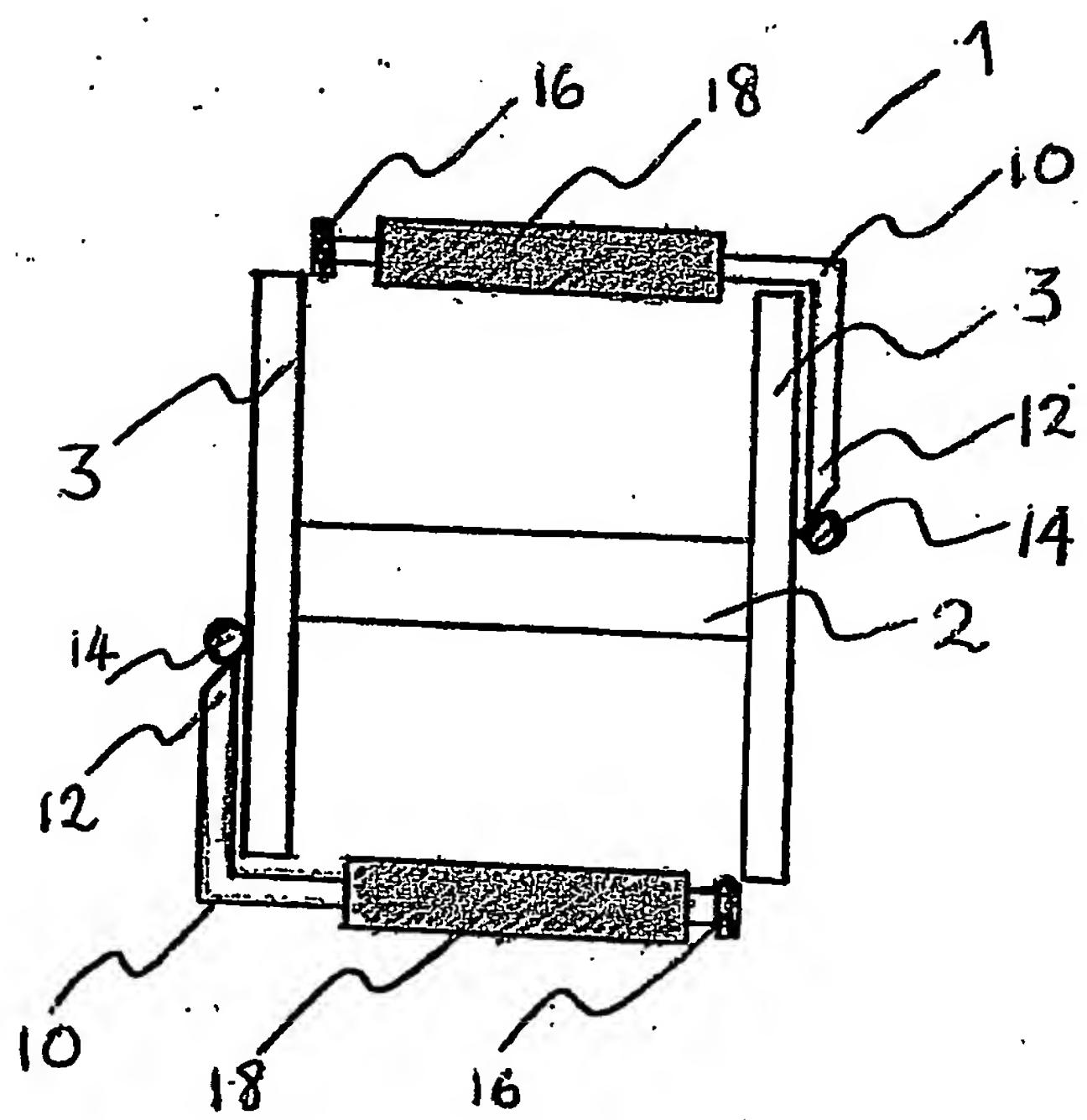


FIG4

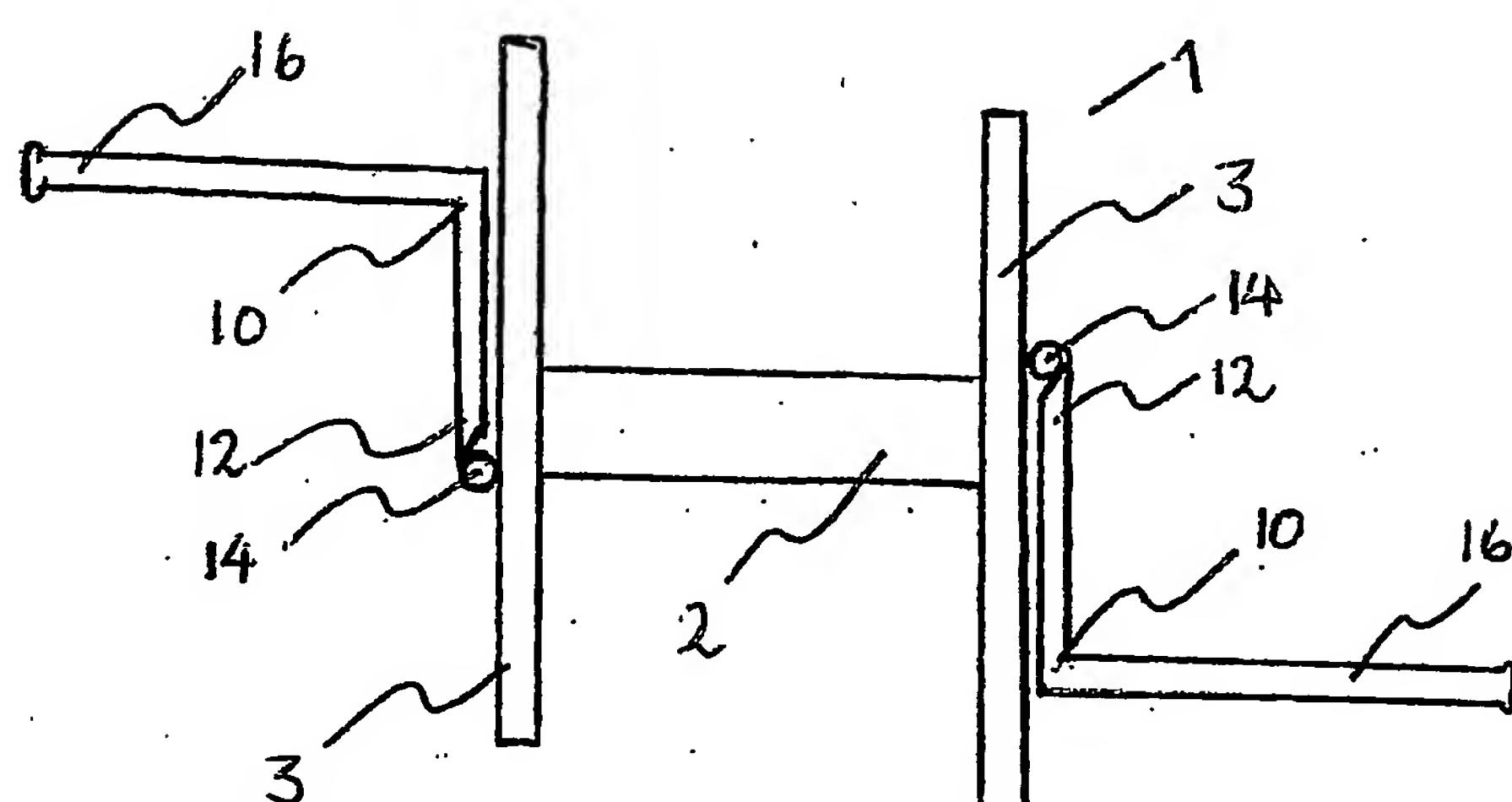


FIG5

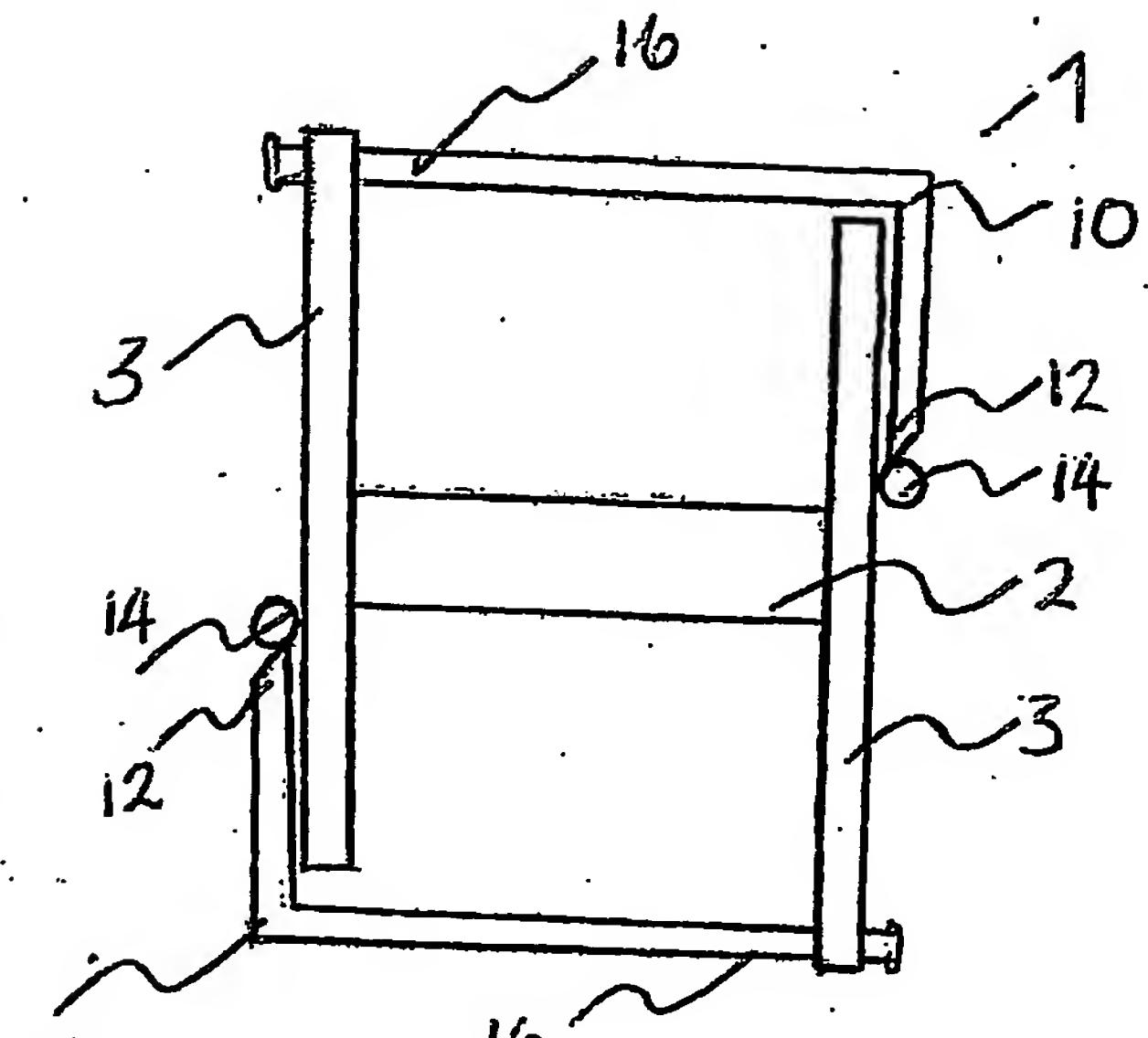


FIG6

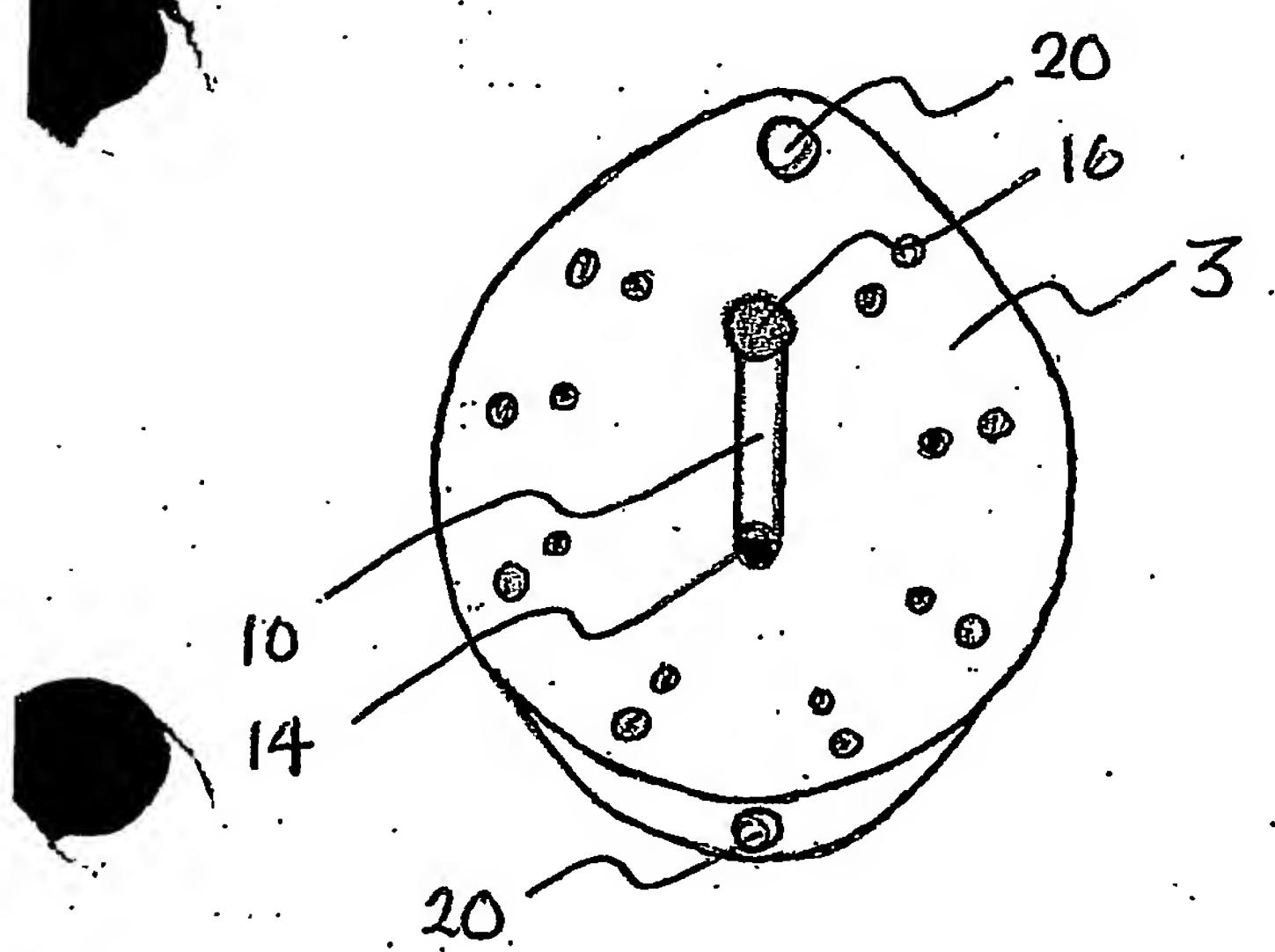


FIG7

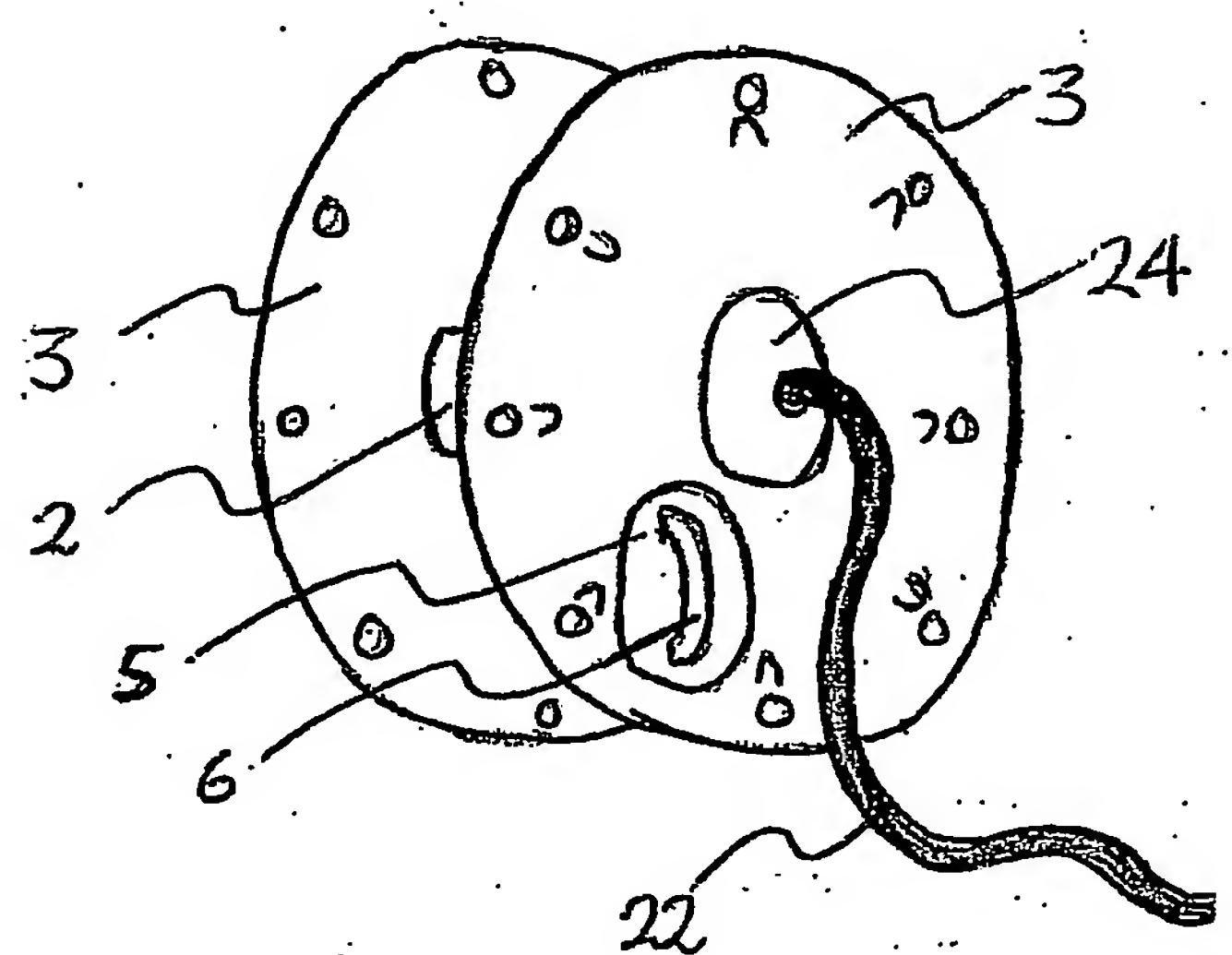


FIG8

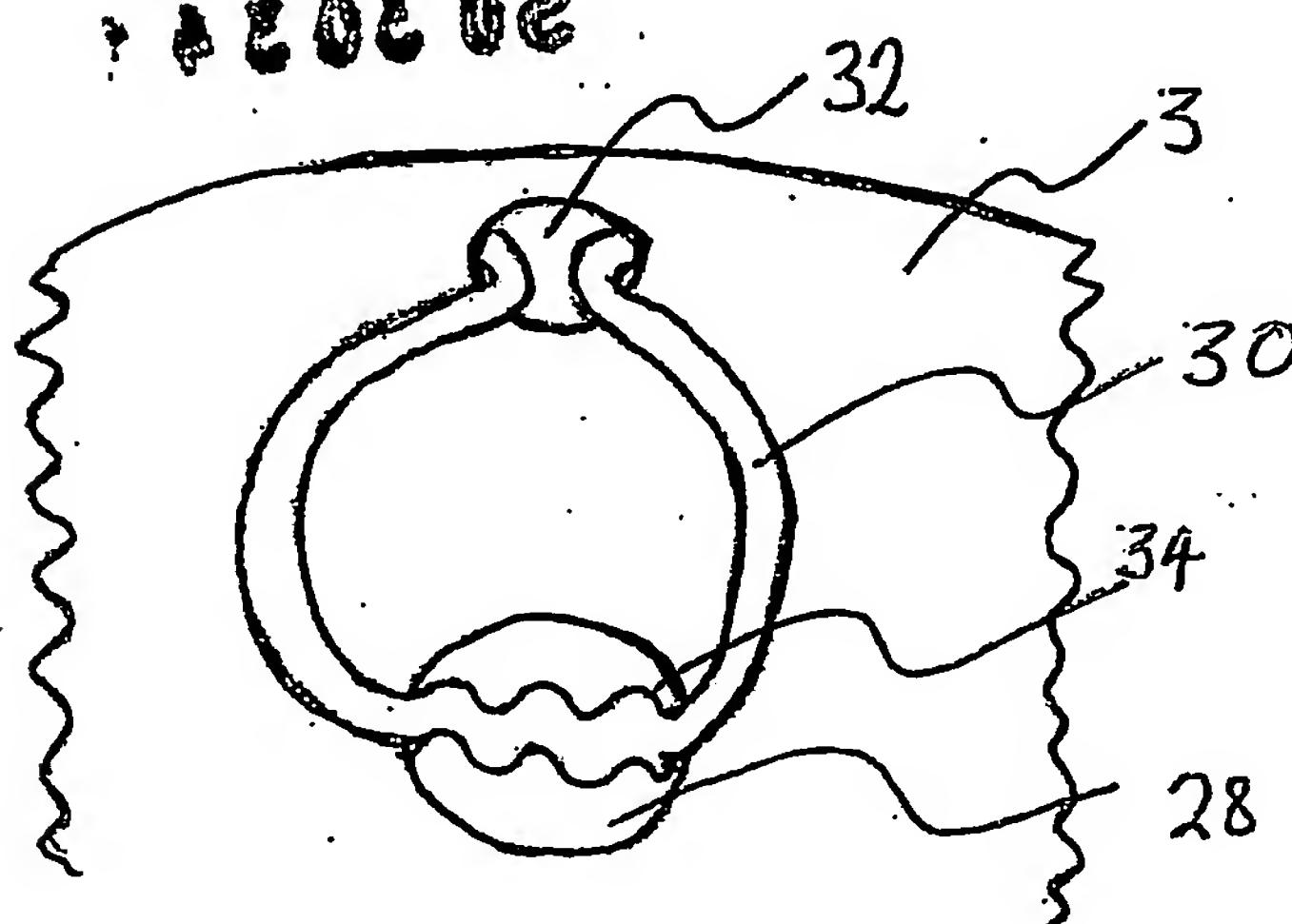


FIG9

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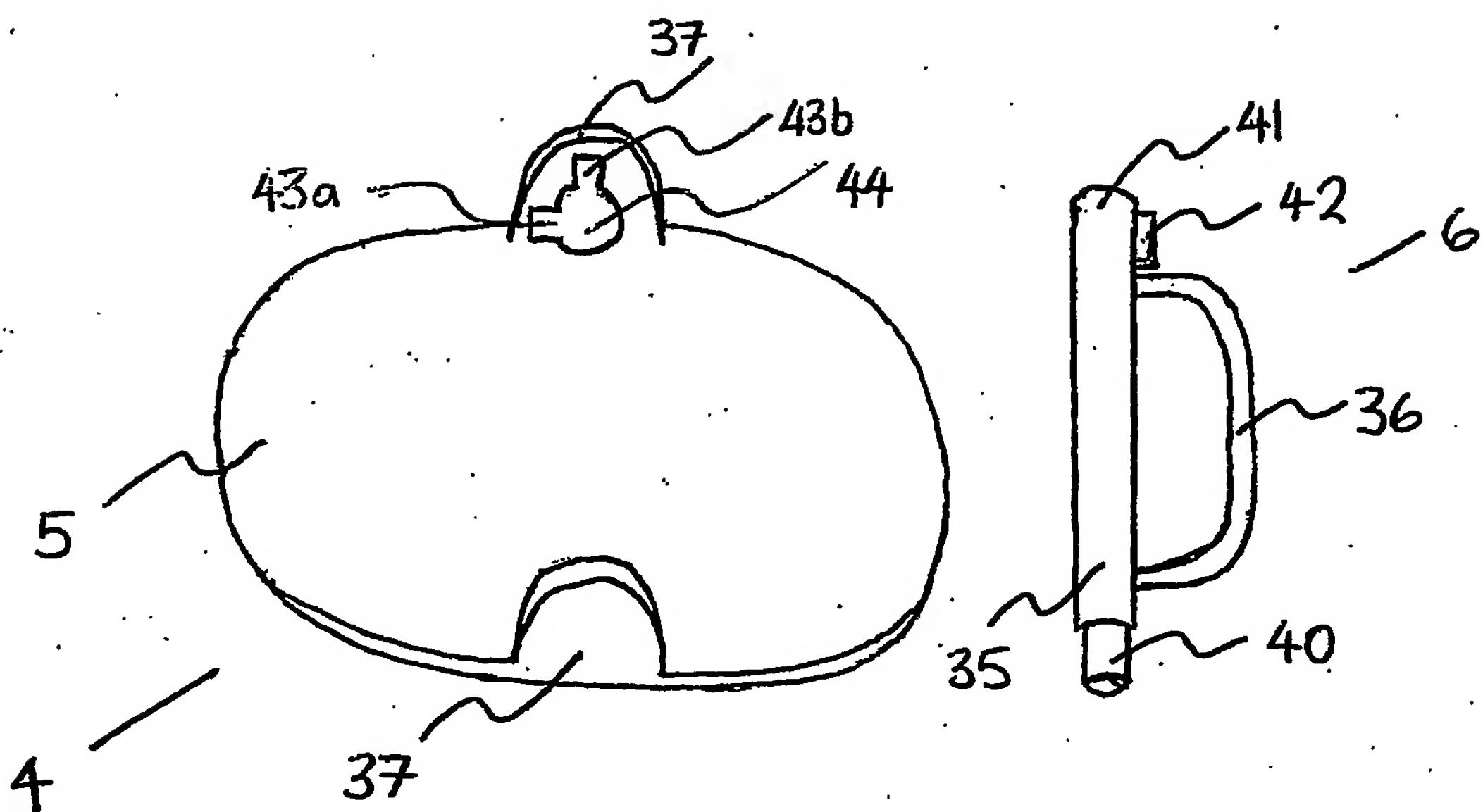


FIG10

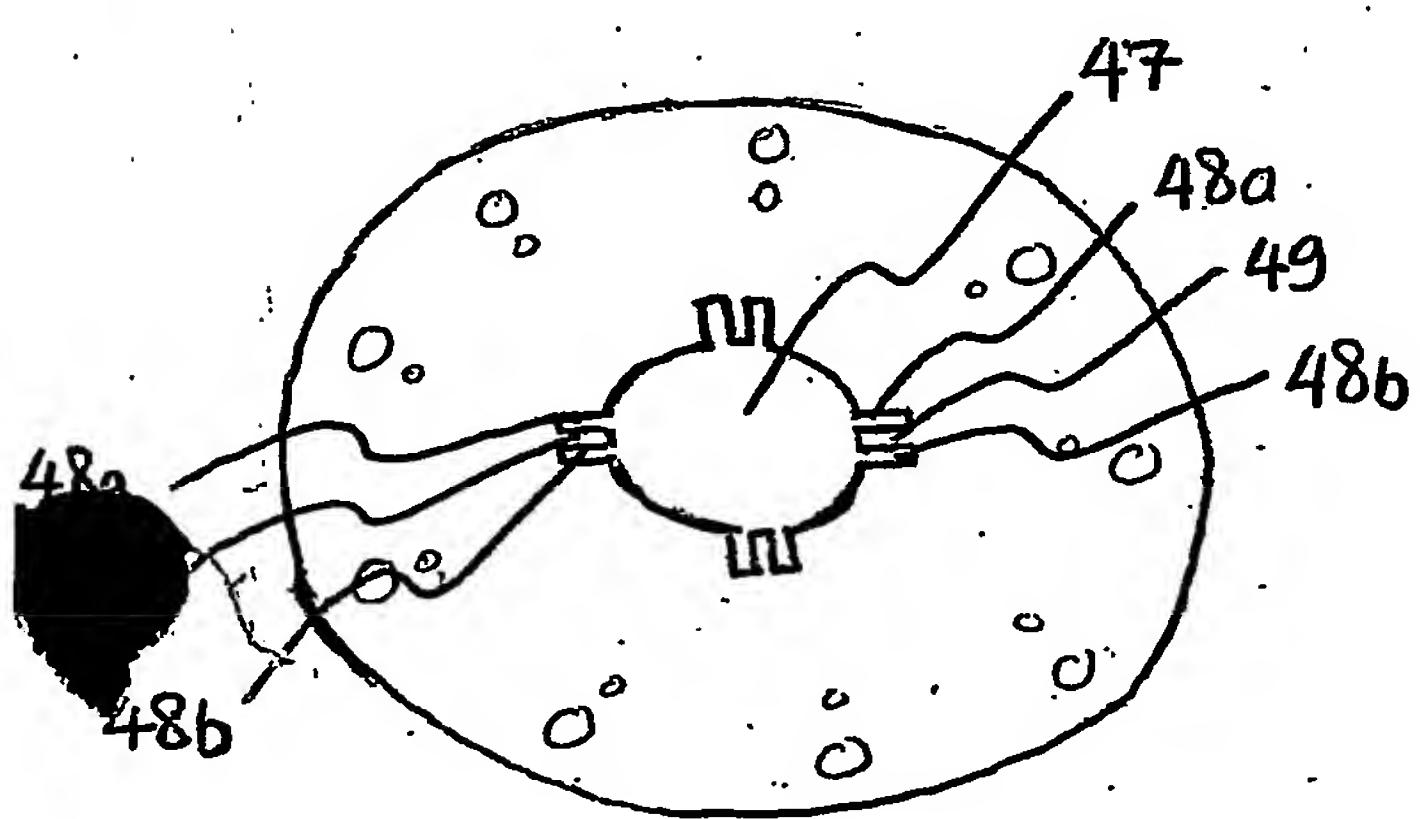


FIG11

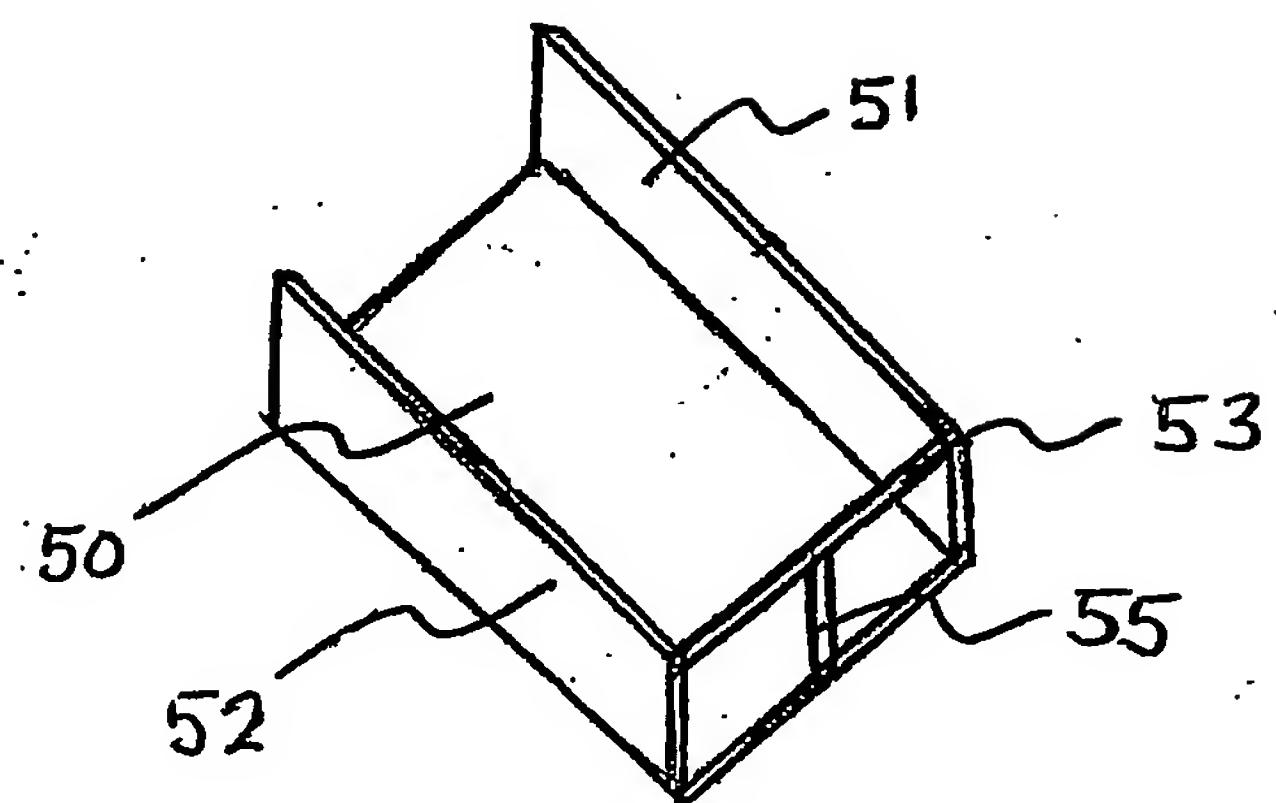


FIG12